After Sales Technical Documentation

TACS
PC LOCALS SERVICE SOFTWARE / NAM PROGRAMMING / TUNING INSTRUCTIONS

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PC LOCALS SERVICE SOFTWARE / NAM PROGRAMMING / TUNING INSTRUCTIONS

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General

PC Locals software is specially designed to facilitate the servicing of fourth generation cellular phones.

The software is used to control the phone according to the user's requirements merely by entering commands via the keyboard or mouse of a PC connected to the phone.

This booklet refers to TACS PC Locals Version 1.00. NMP After Sales will notify service personnel about future upgrades via Technical Bulletins. Software upgrades will be available from your local NMP outlet.

IMPORTANT

The technical information contained herein is intended for use by qualified service personnel only.

Required Servicing Equipment

- Computer: IBM PC / AT or compatible with one unused serial port (COM1 or COM2*), one parallel port (LPT1), hard disk recommended.
- Operating System: DOS Version 3.2 or later
- 600 kB free memory under DOS
- Display: Any 80–character text display
- PC Locals program, either LSA–2K (product code 0193659) for 3.5" disk or LSA–2L (product code 0193660) for 5.25" disk.
- Software Protection Key PKD–1 (product code 0750018)
- M2BUS adaptor DAU–2 (product code 0750006)
- Modular Cable XCM–1 (product code 4626131)
- RS 232 Adaptor, 9 – 25 pins (product code 4626170)
- Service Interface Box JTS–1 (product code 0770018)

NOTE: A number of previous generation PCs use the Intel, National Semiconductor or United Microelectronics IC 8250 as the serial port UART. This is a comparatively inefficient circuit for current purposes and does not necessarily support the M2BUS adaptor at 9600 baud. The newer UART's, NS 16450 and NS 16550AF, from National Semiconductors are devices more suited to this application.

Mechanical Connections

CAUTIONS: **Ensure that you have switched off the PC and the printer before making connections.**

Do not connect PKD–1 to the serial port. This could damage the PKD–1.

The software controls the phone via a separate adaptor connected to the serial port of the PC and to the phone's M2BUS (DAU–2 and XCM–1).

Attach the protection key PKD–1 to parallel port one (25–pin female D–connector) of the PC. When connecting PKD–1 to the parallel port ensure that you insert the PC end of PKD–1 to the PC (male side). If you use a printer on parallel port one, insert PKD–1 between the PC and the printer cable.

Using PKD–1 should not adversely affect the operation of other items of test equipment. If errors do occur try printing without the PKD–1 connected. If printing is now ok please contact your dealer.

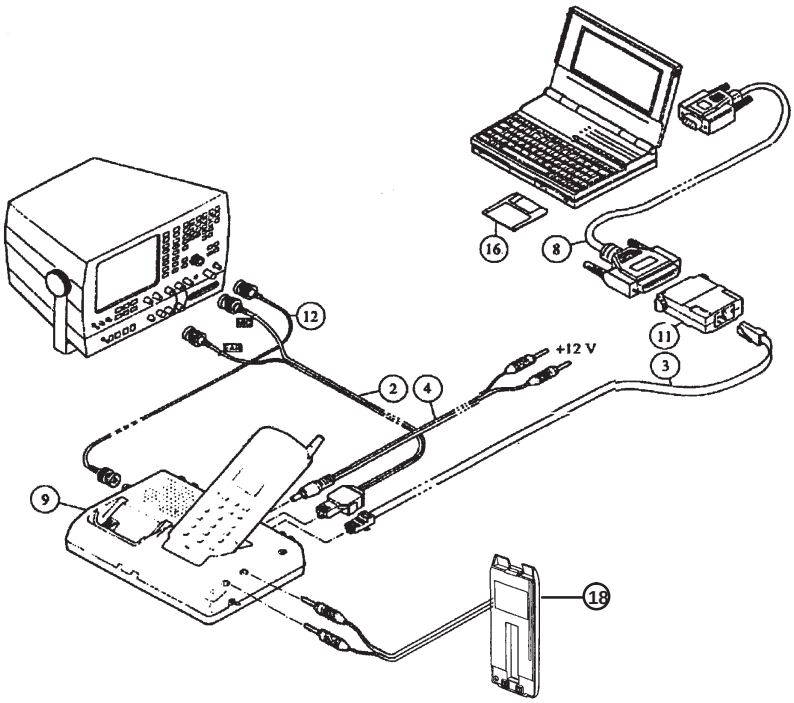
Attach one end of the modular cable, XCM–1, to the PC/M2BUS adaptor, DAU–2, and the other end to the service box, JTS–1. For servicing the phone with the covers in place the service box should always be used. When the covers are removed for servicing the Service Cable, SCC–5, should be connected between JTS–1 and the accessory connector of the system module.

The RF cable should be connected between the RF connector of the test set and the appropriate connector on JTS–1. When the phone covers are removed the RF connection on the extension cable should be used instead.

For audio measurements connect the audio cable, ADS–1, as follows:

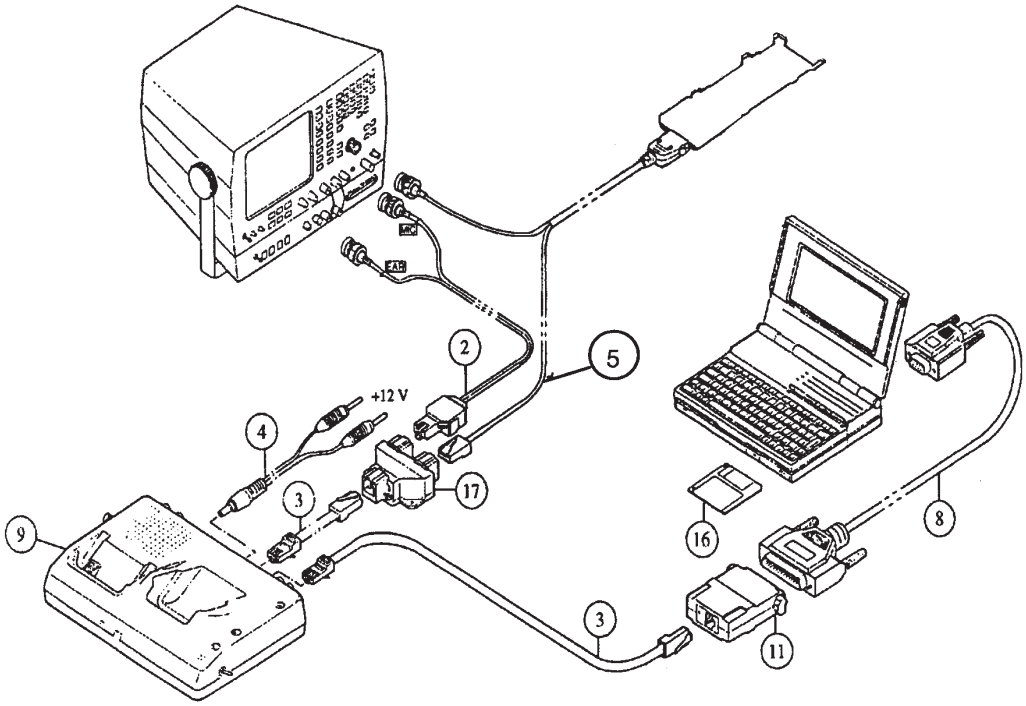
- –EAR line to AF INPUT of test equipment
- –MIC line to MOD GEN OUTPUT of test equipment

Equipment Setup for Testing a Phone with the Covers On



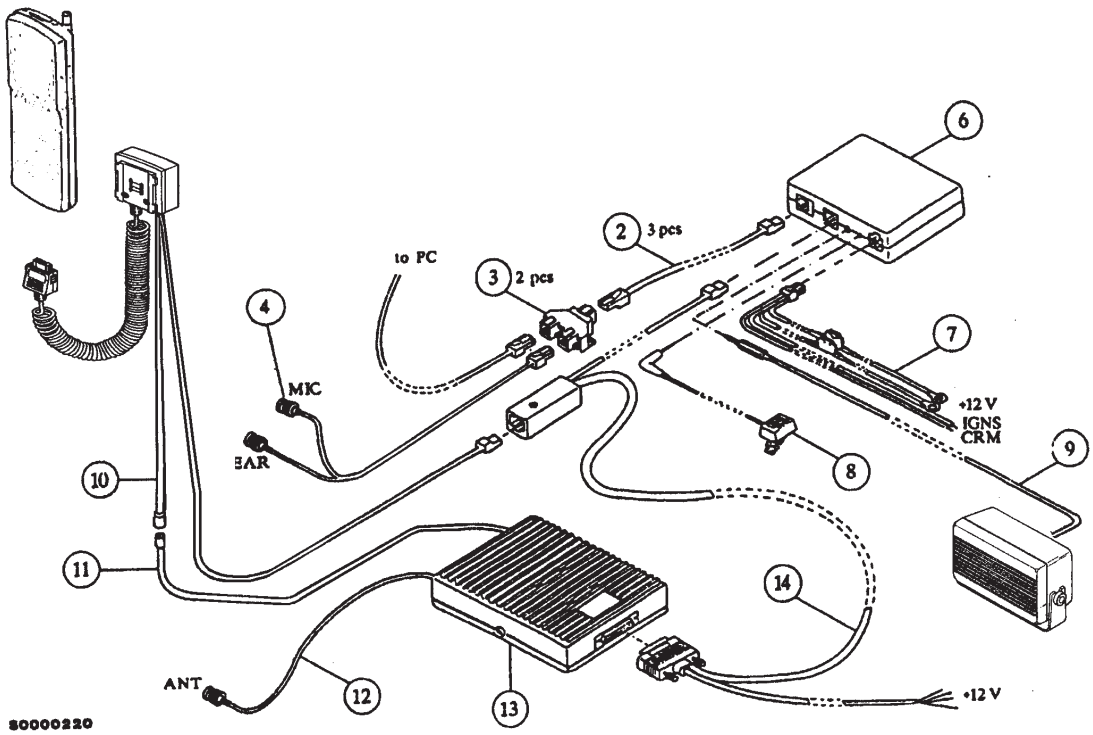
ITEM	ACCESSORY	PRODUCT CODE
2	Audio Cable ADS–1	0730011
3	Modular Cable XCM–1	4626131
4	Power Cable PCS–1	0730012
8	RS232 Adaptor (9–25 pin)	4626170
9	Service Box JTS–1	0770018
11	PC / M2BUS Adaptor DAU–2	0750006
12	BNC–BNC RF Cable	NOT SUPPLIED
16	Service Software LSA–2K	0193659
18	Dummy Battery BTS–6	0770020

Equipment Setup for Testing a Phone with the Covers Off



ITEM	ACCESSORY	PRODUCT CODE
2	Audio Cable ADS–1	0730011
3	Modular Cable XCM–1	4626131
4	Power Cable PCS–1	0730012
5	Service Cable SCC–5	0770019
8	RS232 Adaptor (9–25 pin)	4626170
9	Service Box JTS–1	0770018
11	PC / M2BUS Adaptor DAU–2	0750006
16	Service Software LSA–2K	0193659
17	Modular T–connector	4626134

Equipment Setup for Booster Tuning



ITEM	ACCESSORY	PRODUCT CODE
2	Modular Cable XCM–1	4626131
3	Modular T–connector	4626134
4	Audio Cable ADS–1	0730011
6	HF Junction Box HFJ–2	0694006
7	Power Cable PCH–4	0730009
8	HF Microphone HFM–3	0690001
9	HF Speaker HFS–6	0692006
10	Cable Junction Box JBH–1	0630008
12	Antenna Cable	9780014
13	Booster BSH–2	0500053
14	Front Mount Cable SCE–2	0730014

Start–up Procedure

Switch the phone on by pressing the power–on button of the handset. Switch on the PC.

To start the program on diskette, proceed as follows:

1. Insert the PC Locals disk into drive A of your PC
2. Log into drive A: *type A: and press < Enter >*
3. Start TESLA.EXE and run PC Locals *type **TESLA** and* press < Enter >

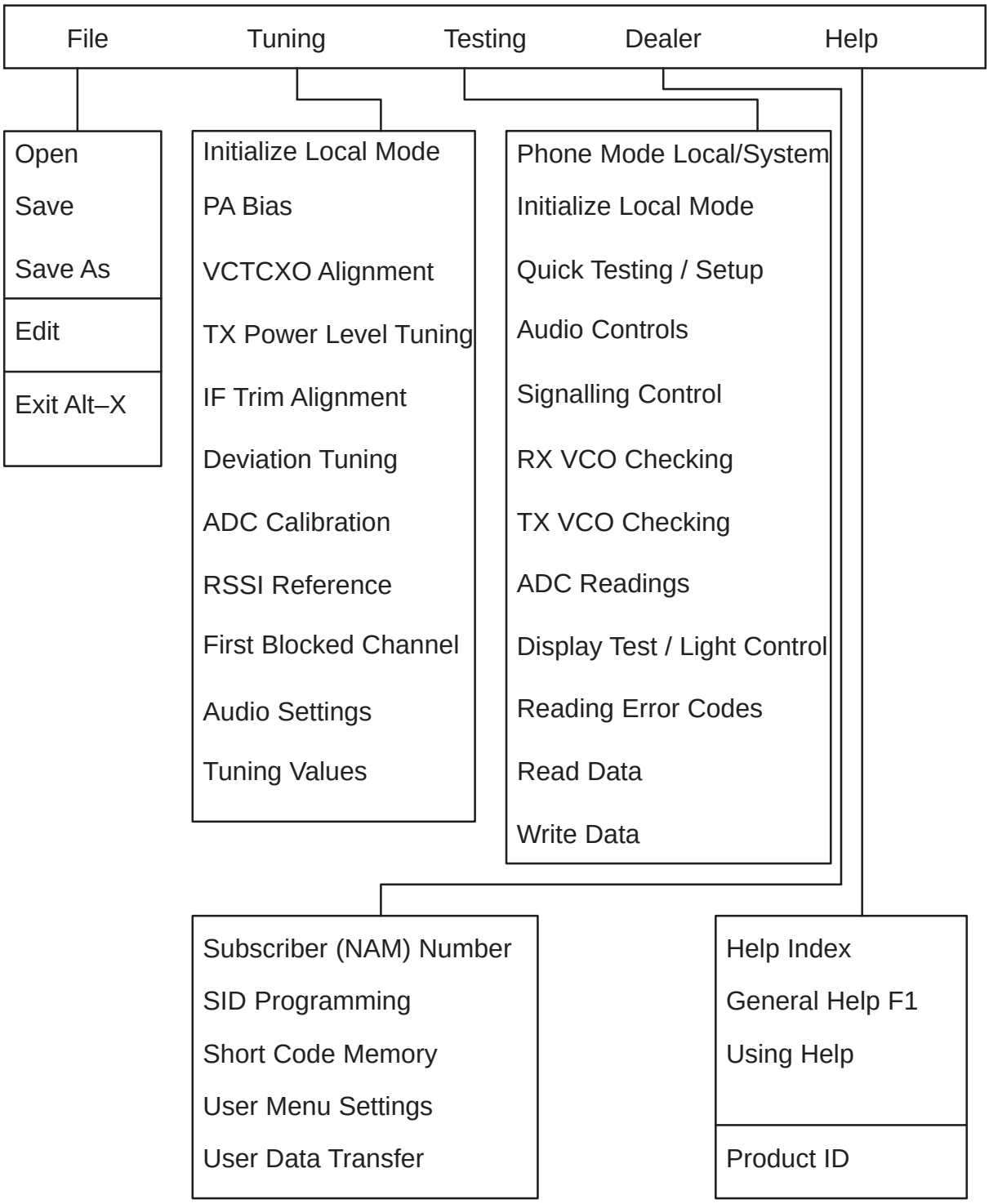
To start the program on hard disk (if installed), proceed as follows:

4. Log into drive C: *type C: and press < Enter >*
5. Start TESLA.EXE and run PC Locals *type **TESLA** and* press < Enter >

The PC Locals software starts by loading the configuration file. After the configuration file has been loaded, a menu bar appears on the top line of the display. Refer to section ” Using Menus ” for how to proceed through the menus. A Phone Identification Window, which displays some basic information about the connected phone, appears in the middle of the display.

Press Enter to close the Phone Identification Window.

PC Locals Menu Structure



Using Menus

There are three visible components to PC Locals: the menu bar at the top, the window area in the middle and the status line at the bottom of the screen. Many menu items also offer dialogue boxes. Although there are several different ways to make a selection in PC Locals, they all access the same commands and dialogue boxes.

The *menu bar* is the primary method of accessing the menu commands. When a command is followed by an ellipsis (...), additional sub–menu(s) are available, otherwise the action occurs as soon as the command is chosen.

To choose menu commands using the keyboard proceed as follows:

- Press F10 to make the menu bar active; the next characters you type will relate to the items on the menu bar.
- Use the ← → arrow keys to select the menu you wish to display and then press Enter. As a shortcut to this step you can just select the highlighted letter of the menu title. For example, when the menu bar is active, press F to move to and display the File menu. At any time press Alt and the highlighted letter (eg *Alt* + F) to display the menu you want.
- Use the ↑ ↓ arrow keys to select command from the menu you have opened and press Enter. As a shortcut you can just press the highlighted letter of the menu command.

At this stage, PC Locals either carries out the command, displays a dialogue box or displays another menu.

There are two ways to choose commands using the mouse:

- Click the desired menu title to display the menu and click the desired command.

OR

- Drag from the menu title down to the menu command. Release the mouse button on the command you want. If you change your mind, simply drag off the menu and no command will be chosen.

PC Locals offers a number of quick ways to choose menu commands. The click–drag method for mouse users is an example. From the keyboard, you can use a number of keyboard shortcuts (or 'hotkeys') to access the menu bar, choose commands or work with dialogue boxes. You need to hold down Alt while pressing the highlighted letter when moving from input box to a group of buttons or boxes.

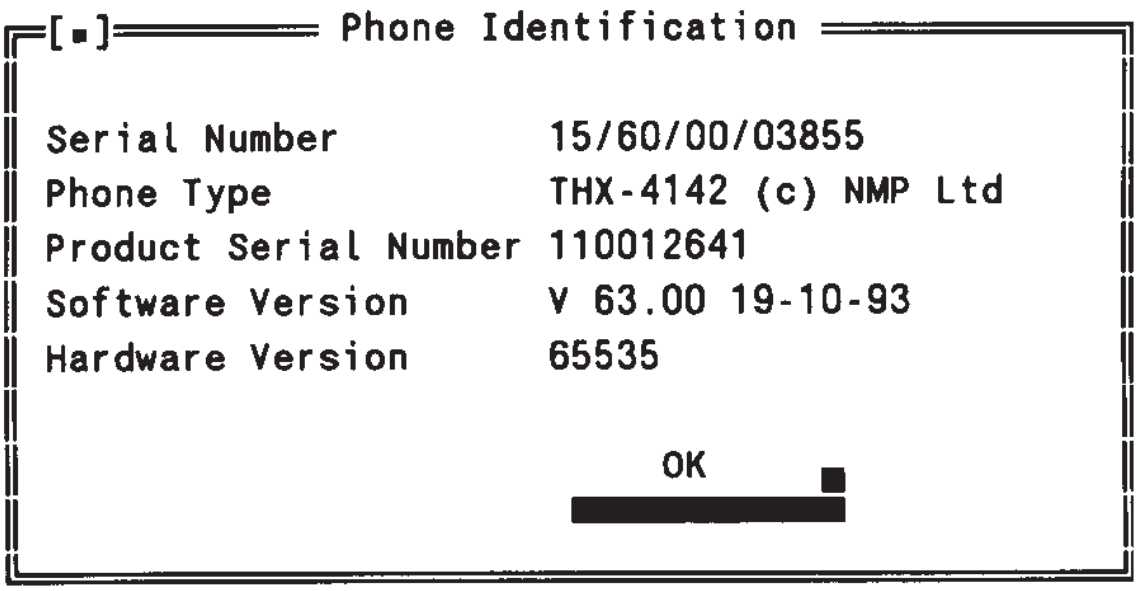
Windows

Some of the actions you see and do in PC Locals happens in a window. A window is a screen area that you can open, close and move.

Most of the windows have these things in common:

- a title bar
- a close box
- scroll bars

The following figure shows a typical window:



The close box of a window is the box in the upper left corner. Click this box to quickly close the window.

The title bar, the uppermost horizontal bar of a window, contains the name of the window. You can drag the title bar to move the window around the screen.

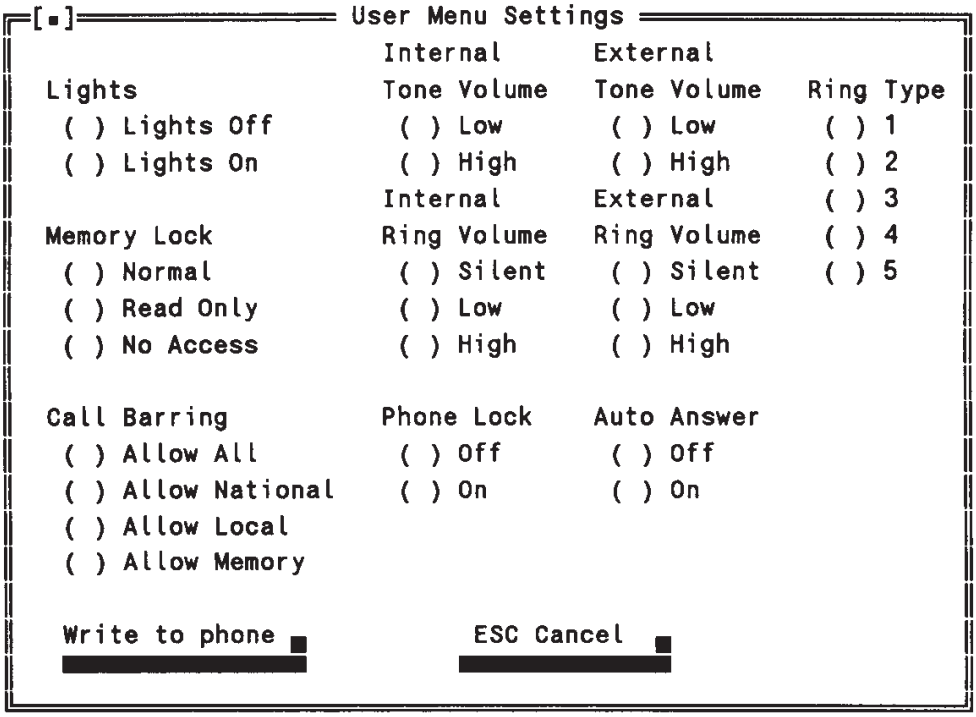
You can use scroll bars with a mouse to scroll the contents of a window. Click the arrow at either end to scroll one line at a time (keep the mouse button pressed to scroll continuously). You can click the shaded area either side of the scroll box to scroll one page at a time. Finally, you can drag the scroll box to any spot on the bar to quickly move to a spot in the window relative to the position of the scroll box. From the keyboard you can scroll the window contents using the arrow keys.

Dialogue Boxes

Most of the menu commands lead to a dialogue box. Dialogue boxes offer a convenient way to view and set multiple options. They are typically used for making settings or performing some action where the phone must be in a certain state and all other actions must be denied. When you are making settings in a dialogue box you work with five basic types of on–screen control:

- action buttons
- radio buttons
- check boxes
- input boxes
- list boxes

Dialogue boxes also have similar features to windows; title bar and close box. Below is a sample box which shows some of these features:



This dialogue box has two standard buttons: Enter and Esc. If you choose Enter, the choices in the dialogue box are accepted. If you choose Esc, the dialogue box is exited and no parameters are changed. Esc is always a keyboard shortcut to exit the dialogue box.

If you are using a mouse, click the dialogue–box button you want. When you are using the keyboard, press *Alt* and the highlighted letter of an item to activate it. Press Tab to move forwards or backwards from one item to another in a dialogue box. Each element is highlighted when it becomes active.

Radio buttons operate in a similar manner to car–radio buttons. They are arranged in groups, and only one radio button in a group can be selected at any one time. To choose a radio button, click it or its text. From the keyboard, select Alt and the highlighted letter or press Tab until the group is highlighted, and then use the arrow keys to choose a particular radio button. Press Tab again to leave the group with the new radio button chosen.

Check boxes differ from radio buttons in that you can have any number of check boxes selected at any time. When you select a check box an X appears in it to indicate it has been selected. An empty box indicates it is not selected. To change the status of a check box, click it or its text, press Tab until the check box is highlighted and then press the Spacebar or select Alt plus the highlighted letter.

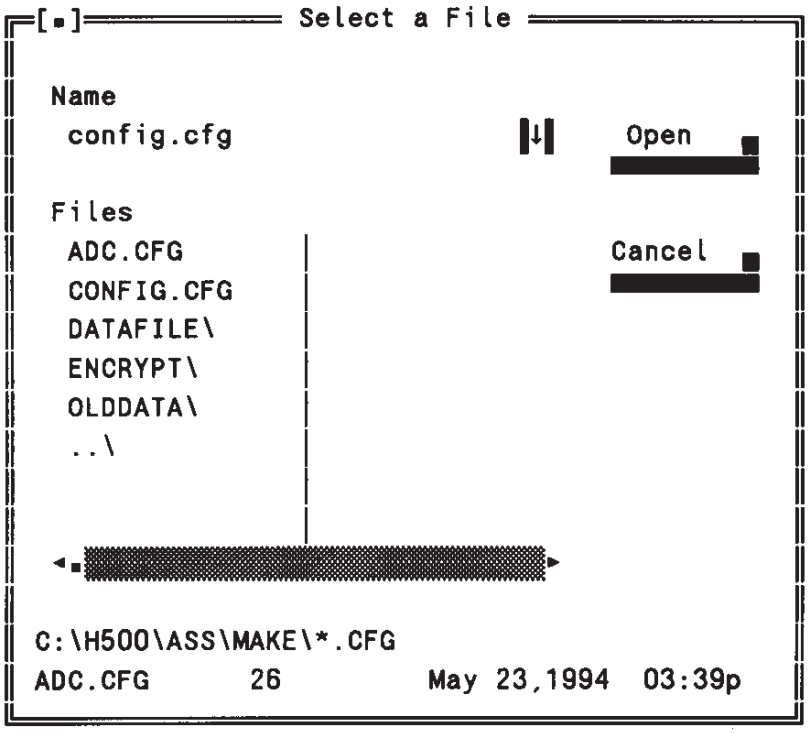
If several boxes apply to a topic, they appear as a group. In this case tabbing moves to the group. Once the group is selected use the arrow keys to select the item you want and then press Spacebar to check or uncheck it.

Input boxes let you type in text. Most basic text–editing keys work in the text box (for example arrow keys, Home, End, Backspace, Del and Ins). If the contents of the input box are highlighted (typically when you first select it) and you start typing in new data, the old data is erased.

A final component of some dialogue boxes is a list box, which lets you scroll through and select from variable length lists without leaving a dialogue box. You make a list box active by clicking it or by choosing the highlighted letter of the list title (or press Tab until it is highlighted). Once a list box is displayed, you can use the scroll box to move through the list or press the ↑ ↓ arrow keys from the keyboard.

File–Selection Dialogue Box

The File–Selection Dialogue box allows you to select and open a file, enabling you to either read data from, or write data to that file. Below is an example of such a box:



Overview

PC Locals is divided into 5 main blocks: File, Tuning, Testing, Dealer and Help.

File is used to save all parameters to a configuration file to enable set up as required. It is possible to change the PC settings to a configuration file as well as the default parameters of the phone such as channel number, transmitter on / off, audio settings etc. It is also used to edit default settings for NAM information and SID screening information.

Tuning contains the functions required for tuning the phone.

Testing contains the functions required for testing the phone in Local mode.

Dealer is used to edit all NAM and other user information. It also contains user data transfer programs to be used in case a faulty phone should be replaced with a new unit.

Help contains all the help information for using PC Locals.

File Menu

The file menu contains commands related to file operations. It allows you to save and edit configuration files and also exit PC Locals.

Open

The File / Open command displays a File–Selection dialogue box that allows you to select a configuration file to open. These files contain either Local mode setup, NAM default setup or SID Screening setup parameters. You can edit these parameters with File / Edit command. Once the file is opened the new values take effect.

Save

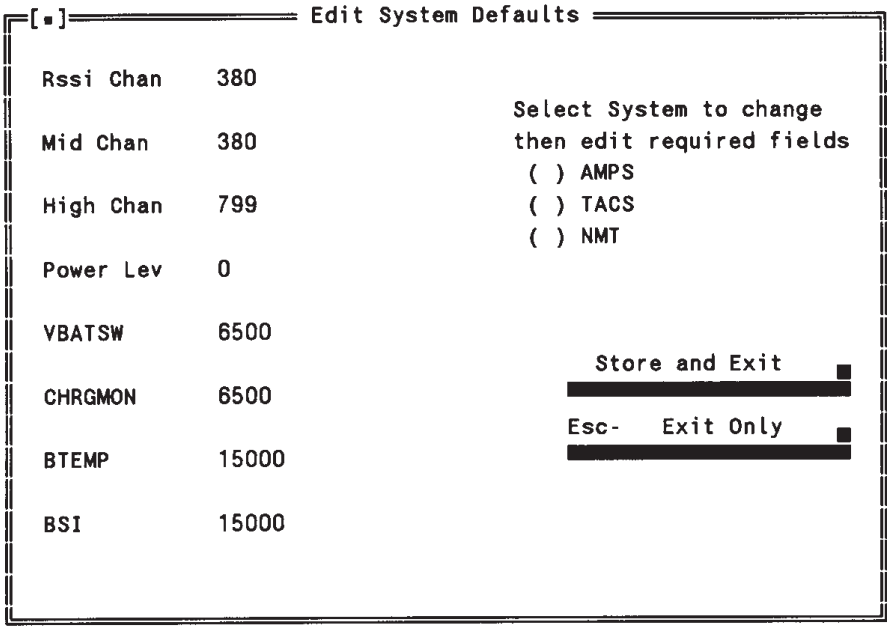
The File / Save command saves the previously opened configuration file. If no file has been opened, the Save As command is performed instead.

Save As

The File / Save As command allows you save the configuration file under a different name, in a different directory or on a different drive. When you choose this command you will see the File–Selection dialogue box for Save File As.

Edit

The File–Edit command opens a dialogue box for editing configuration file contents, setting up NAM defaults and SID screening defaults. A dialogue box would look like the example below:



At the top of the dialogue box you can see the name of the current configuration file. Below that are default testing / Local mode settings. Select the value you want to change using 'hotkeys' (*Alt* + letter), clicking by mouse or using Tab keys and then type in the new value. Accept the changes by pressing Enter or abandon by pressing Esc (or click the corresponding button).

Exit

The File / Exit command exits PC Locals. Before exiting, a confirmation box is displayed. Pressing Enter quits the program and Esc cancels exiting.

Tuning Procedure

General

Almost all tuning of the phone is carried out using PC Locals software. PC Locals switches the phone/system module into Locals mode, in which the phone can be remotely controlled via the M2BUS interface.

Tuning is achieved by the PC Locals software communicating with the D/A and A/D convertors of the phone. In some instances, the phone processor will also calculate the required correction parameter.

The calibration data of the phone resides on the EEPROM. The contents of the EEPROM can be read by the PC Locals program and saved as a file. This is useful when there is a need to retain this information ie. if you need to replace the EEPROM during the repair process. The program also enables writing of the factory preset calibration data to the EEPROM, after which, the whole tuning process should be repeated.

If a repair has been carried out on the RF section of a system module then the appropriate tunings should be performed as described in the following section using the on–screen help menus as a guide. Spare system modules are pre–tuned at the factory and do not require re–tuning.

CAUTION:

During tuning:

- take care not to damage sensitive measuring instruments when excessive RF power levels are present
- perform all tuning steps in the order described
- never try to mask a fault by tuning it out

Tuning Menu

This menu contains the commands required for tuning the phone. Selecting the Tuning menu opens a sub–menu from where the desired Tuning parameters can be selected. After you select a tuning parameter from the sub–menu, a tuning dialogue box will be opened and all necessary settings for the phone will be done automatically.

Initialize Local Mode

This command reactivates the Locals mode of the phone.

Local Mode Activation

1. Select option 1 from the Tuning menu
2. The text ” Local ” will appear in the phone’s display

PA Bias Calibration

This command allows you to tune the two stages of the TX power amplifier separately to achieve maximum efficiency.

Procedure

1. Select Tuning / PA Bias Calibration
2. The PA Bias Calibration procedure is as follows:

   a) Enter the phone current, as measured on a meter, into the Supply Current Text Box and then select Next Stage.

   b) Follow the on–screen menu instructions to set PA Driver Bias Value and select Next Stage. Repeat this process for PA O/P Bias Value.

   c) Enter the new value to EEPROM by pressing ENTER on the keyboard or clicking on the corresponding button using the mouse.

VCTCXO Alignment

This command is used to tune the VCTCXO frequency of the phone. This command will tune the phone to channel 1988 and activate the transmitter. Use an accurate frequency counter when measuring the resultant output. Please note that the VCTCXO should only be aligned using PC Locals. No attempt should be made to physically tune the device using the trimming capacitor.

Tuning Procedure

1. Select Tuning / VCTCXO Alignment
2. Adjust Tx carrier frequency (F_0) to within +/– 50Hz
3. Enter the new value to EEPROM by pressing ENTER on the keyboard or clicking on the corresponding button using the mouse.

TX Power Level Tuning

This command is used to tune the phone's TX power levels. When selected, the transmitter will be switched on at Power Level 0 on Channel 1988.

Tuning Procedure

1. Connect a power meter to the phone's external antenna connector
2. Select Tuning / TX Power Level Tuning
3. The Channel Number can be changed using Backspace and Return keying commands. After Return, the cursor will return to the last power level selected
4. To tune a Power Level, select the level you wish to tune from the list. The target value will appear to the left of the cursor. Use the Coarse and Fine commands until the target value is reached.
5. Enter the new value to EEPROM using Enter New Value
6. Follow this procedure for all the Power Levels

IF Trim DAC Alignment

With this command you can check that the RX IF Frequency is tuned to give optimum RSSI. This is an automatic process using an 8–bit DAC.

Tuning Procedure

1. Select Tuning / IF Trim Alignment
2. Set RF input signal to –93dBm on the Channel Number indicated on the PC screen
3. Select Automatic Tuning. The RSSI is measured for each of the 8 DAC levels, with the optimum level indicated when the process is completed.
4. Select Re–read RSSI to check this highest level
5. Enter the new value to EEPROM by pressing Enter on the keyboard or clicking on the corresponding button using the mouse.

Deviation Tuning

A number of deviation tunings are grouped together in this command. They are, however, still tuned independently of each other.

Tuning Procedure

1. Select Tuning / Deviation Tuning
2. Select Sig Tone to move cursor and show the relevant on–screen information for that particular tuning parameter
3. Use the Coarse and Fine commands until the target value is reached
4. Repeat for Nominal and Maximum Deviation tunings
5. Enter the new values to EEPROM by pressing Enter on the keyboard or clicking on the corresponding button using the mouse.

ADC Calibration

With this tuning, the Battery Reference value and Reference Charge voltage value are both set using an accurate 6V power supply, provided by Service Interface Box JTS–1. These tunings should not be attempted while the phone covers are removed, as the voltage used to power the phone is too inaccurate when not using the Dummy Battery Pack, BTS–6.

Tuning Procedure

1. Select Tuning / ADC Calibration
2. For VBATSW, the program reads the EEPROM value in the phone and the 6V A / D reading presently on the VBAT line
3. For CHRGMON the program reads the EEPROM value in the phone and the 6V A / D reading presently on the VC line
4. Enter the new values to EEPROM by pressing Enter on the keyboard or clicking on the corresponding button using the mouse.

RSSI Reference Value

This consists of tuning the noise floor reference value for the RSSI meter. This is carried out with no input signal present.

Tuning Procedure

1. Select Tuning / RSSI Reference Value
2. Disconnect the RX signal from the phone’s external antenna connector and press Return
3. The program displays the reference value stored in the phone together with the value read from the A / D convertor. The A / D value can be re–read by pressing the spacebar.
4. Enter the new value to EEPROM by pressing Enter on the keyboard or clicking on the corresponding button using the mouse.

First Blocked Channel

The harmonic components of the modem crystal can decrease the sensitivity of the receiver on some channels. To prevent this blocking effect, the oscillator frequency is measured so that the frequency can be shifted slightly at those channels which could be blocked.

Tuning Procedure

1. Select Tuning / First Blocked Channel
2. Connect a Frequency Counter to N403, pin 7 on the System Module
3. Write the measured frequency to the Text Editing Box
4. Enter the new value to EEPROM by pressing Enter on the keyboard or clicking on the corresponding button using the mouse.

Audio Settings

This menu allows you to set up the NANTIC registers for the internal and external microphone and loudspeaker signals.

Tuning Values

With this command you can save the Tuning Data from the EEPROM to a file. You can also write either previously saved data or factory default values from a file to a phone's EEPROM. This is useful if the EEPROM device has had to be replaced during the repair procedure.

Testing / Testing Menu

The Testing Menu allows the Service Technician to switch a phone to Local mode in order to attempt to simulate a reported fault or configure a phone to test a certain parameter. It allows the technician complete control over internal and external audio, and the RF settings.

When Testing is selected, the phone is placed into Service mode automatically. This is known as Local mode. Unless the user changes this configuration, using File, the phone receiver is tuned to Channel 1988; the Transmitter synthesiser is also tuned to Channel 1988 but with the power amplifier switched off.

Phone Mode – Local / System

This allows you to change from Local Mode to normal System Mode and back to Local Mode.

Initialize Local Mode

This allows the phone to be reset into Local mode. The text 'Local' will appear in the phone's display.

Quick Testing / Setup

This command opens a Window allowing the user full control over the channel the phone is tuned to; the transmit power state; and access to some simple audio routing and signal switching.

Audio Controls

This command allows you to test all possible audio paths in and out of the audio processing device including XMIC, XEAR and DTMF.

Signalling Control

This command allows the setting of the following signalling parameters. The * symbol in each column indicates the phone's present state.

Supervisory Tone

SAT 0 5970 Hz

SAT 1 6000 Hz

SAT 2 6030 Hz

SAT Off

Sig Tone

ST On

ST Off

Data Output

Wide Band Data On

Wide Band Data Off

State

Mute

Mic

Ext Mic

DTMF

RX VCO Checking

This command will check that the RX VCO synthesiser will lock across the required bandwidth. This is only a check facility; there is no parametrical tuning involved. You can select Scan Band for complete bandwidth analysis or Frequency Sweep for Cellular Bandwidth analysis.

TX VCO Checking

This command will check that the TX VCO synthesiser will lock across the required bandwidth. This is only a check facility; there is no parametrical tuning involved. You can select Scan Band for complete bandwidth analysis or Frequency Sweep for Cellular Bandwidth analysis.

ADC Reading

This displays a table showing the following readings of the A / D convertors.

A/D Convertor Readings

0	VBATSW	Battery voltage
1	CHRGMON	Charge voltage
2	RSSI	Received Signal Strength
3	TXI	Transmit power monitor
4	BTEMP	Battery temperature
5	HOOK	Hook line
6	BSI	Battery size indication
7	HFCON	Handsfree control

Display Test and Light Control

This enables checking of the operation of the display segments and the phone backlighting.

Display Test

Clear Display

Fill pattern 1 switches on all icons and fills alphanumeric area with a pattern

Fill with pattern 2 switches on all icons and fills alphanumeric area with a different pattern

Fill with pattern 3 switches on all icons and fills alphanumeric area with a different pattern

Lights

On switches on all backlighting

Off switches off all backlighting

Reading Error Codes

This command can give one of the following error codes.

Error codes

1 Error in EEPROM id field

2 Error in EEPROM RF tuning parameters

3 Error in EEPROM audio tuning parameters

4 Error in EEPROM device / charge tuning parameters

5 Error in checking the serial number

7 Error in the modem circuit

or 'No Error Detected'

Dealer

Selecting Dealer will bring up a sub–menu as shown below:

Subscriber (NAM) number

Short code memory

User menu settings

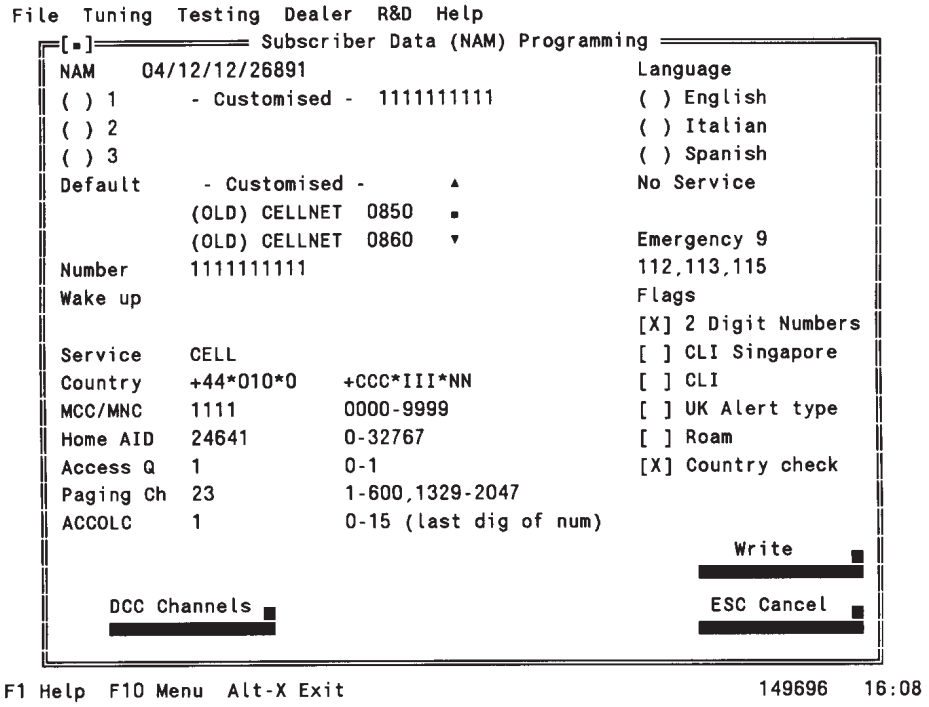
User data transfer

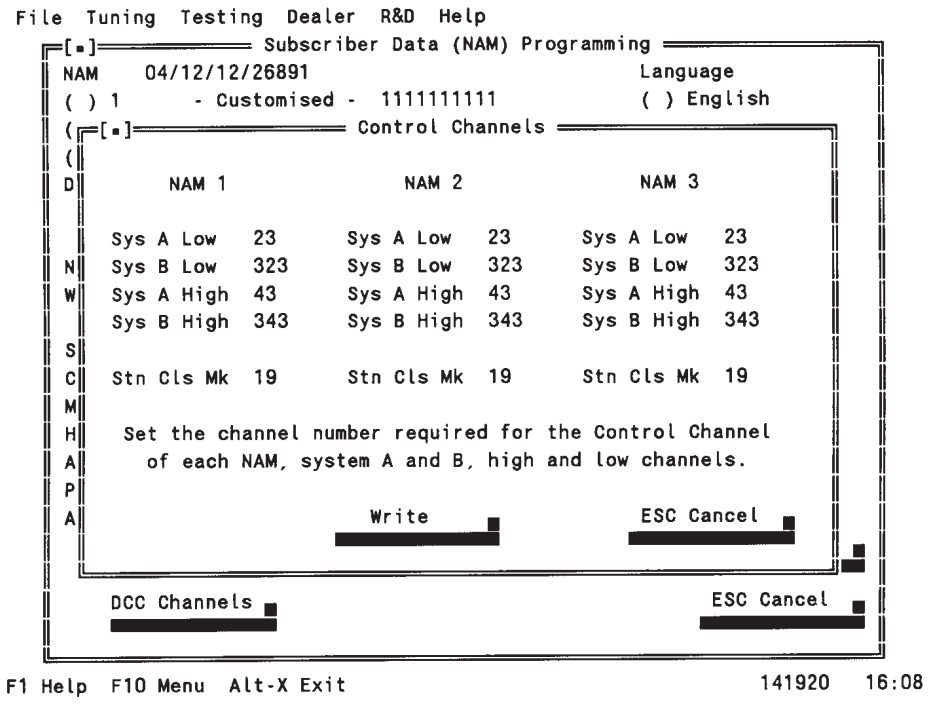
Subscriber (NAM) Number

This can be used to program all the Subscriber Data and Common NAM Data information into a phone. This can also be programmed through the phone's keypad. A customisation feature is also available through **F**ile. This allows the user to set up common system data / default settings for any cellular operator and then recall them in this menu. It is primarily aimed as a time saving feature for dealers.

CAUTION: If you wish to only view and not change the NAM information, press Esc to exit the screen.

Any NAM in the phone can be read from / written to by selecting either 1, 2 or 3. When a selection is made all the NAM information displayed on the PC is updated. Basic information displayed next to 1 / 2 / 3 is operator name (if the phone has been programmed using the customisation feature) and Subscriber Number.


File Tuning Testing Dealer R&D Help
Subscriber Data (NAM) Programming
NAM 04/12/12/26891
( ) 1 - Customised - 1111111111
( ) 2
( ) 3
Default - Customised -
(OLD) CELLNET 0850
(OLD) CELLNET 0860
Number 1111111111
Wake up
Service CELL
Country +44*010*0 +CCC*III*NN
MCC/MNC 1111 0000-9999
Home AID 24641 0-32767
Access Q 1 0-1
Paging Ch 23 1-600,1329-2047
ACCOLC 1 0-15 (last dig of num)
Language
( ) English
( ) Italian
( ) Spanish
No Service
Emergency 9
112,113,115
Flags
[X] 2 Digit Numbers
[ ] CLI Singapore
[ ] CLI
[ ] UK Alert type
[ ] Roam
[X] Country check
Write
DCC Channels
ESC Cancel
F1 Help F10 Menu Alt-X Exit
149696 16:08


File Tuning Testing Dealer R&D Help
Subscriber Data (NAM) Programming
NAM 04/12/12/26891
( ) 1 - Customised - 1111111111
Language
( ) English
Control Channels
NAM 1 NAM 2 NAM 3
Sys A Low 23 Sys A Low 23 Sys A Low 23
Sys B Low 323 Sys B Low 323 Sys B Low 323
Sys A High 43 Sys A High 43 Sys A High 43
Sys B High 343 Sys B High 343 Sys B High 343
Stn Cls Mk 19 Stn Cls Mk 19 Stn Cls Mk 19
Set the channel number required for the Control Channel
of each NAM, system A and B, high and low channels.
Write
ESC Cancel
DCC Channels
ESC Cancel
F1 Help F10 Menu Alt-X Exit
141920 16:08

In the example Figure on page 28, this is

NAM 04/12/12/26891

(*) **1** – Customised – 1111111111

( ) **2**

( ) **3**

From this example it can be seen that NAM 1 has been programmed. The ESN of the phone is also clearly displayed.

Dealers are strongly advised to use the customisation feature. For any operator they could store, as the default setting, the following parameters:

- Service – this indicates the operator prefix for the selected NAM.
- Country – this information should contain the international prefix, country code and national prefix.
- MCC / MNC – this indicates the Mobile Identification Number for the selected operator.
- Home AID – this number is used to define the primary traffic area of the phone. The number contains the country code, system bit information and the area code.
- Access Q – this is used to define the method of sending the phone identification data (1 = country code in use; 0 = no country code in use).
- Paging Ch – this number is used to identify the primary traffic channel of the phone.
- ACCOLC – this number is used to identify which overload class the phone belongs to.

You are also able to store:

- Language – 3 languages can be selected (English, French or Spanish).
- Emergency 9 – 3 different emergency numbers can be defined. The principal emergency number programmed should be the emergency number applicable to the user's primary location.

The process for programming a NAM with this method is as follows:

1. Select NAM 1, 2 or 3
2. Select Default – scroll through the available defaults using the arrow keys until you find the desired default. All the default information will be displayed on the PC screen
3. Select Number and program the new subscriber number using the normal text editing keys

4. Select Wake up and program the new Wake up message using the normal text editing keys. To help with the message alignment, the phone's display will constantly be updated during this process
5. Select Security and program the new security code using the normal text editing keys
6. Select Enter to save to EEPROM.

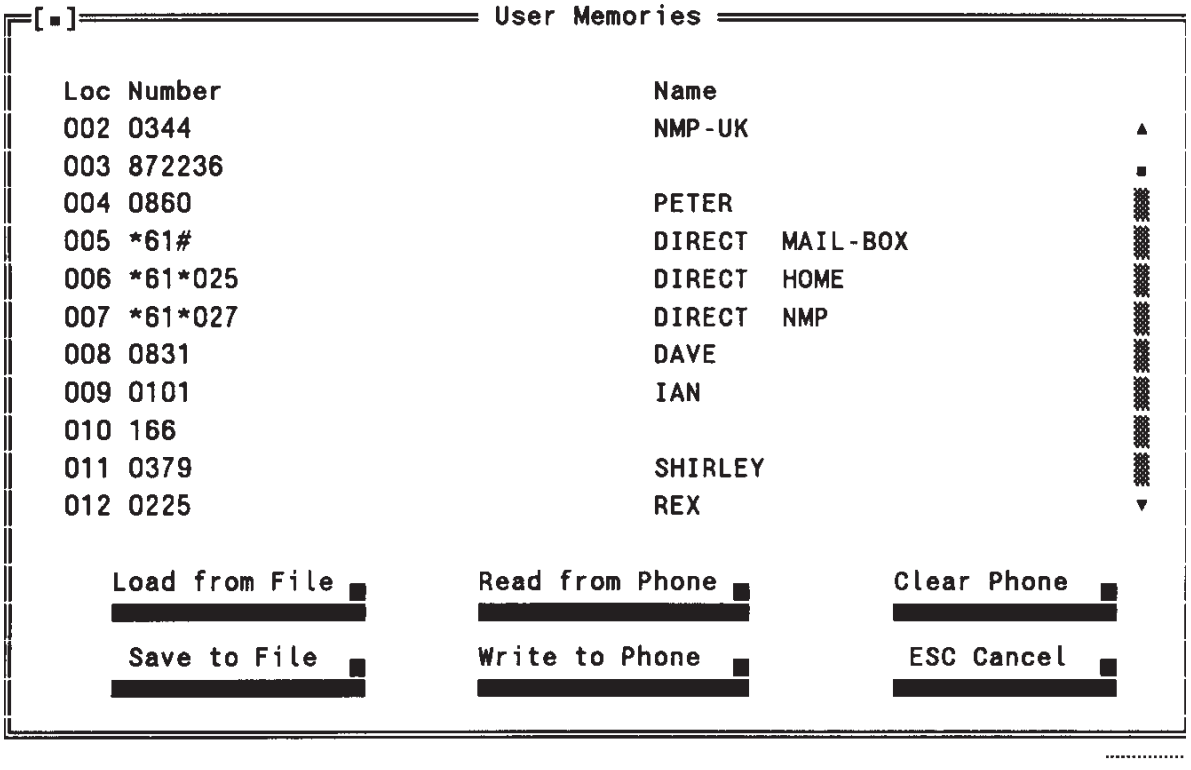
Alternatively, the user is able to program each individual parameter if they choose not to use the customisation feature.

Short Code Memory

Selecting Dealer / Short Code Memory opens the short code memory dialogue box. In this box you can view and edit all 99 memory locations of the phone. You can also store the information to a file and read information from a file. It is also possible to read short code memory files generated by other product's PC Locals software. The following PC Locals supports this general file format

- PC Locals THA–6 / THA–17 / THA–7 V4.9
- Subdata THN–6 / THN–7 / CD60HN V4.9
- PC Locals THN–6 / THN–7 / CD60HN V4.9
- PC Locals THX–6 / THX–7 V4.9
- PC Locals NMC–1

The SCM editing dialogue box is shown below:



In the editing dialogue box, edit or type in a new name and number. You can change the field with the TAB key or clicking with a mouse. When this is complete you are able to accept the new values and return to the full SCM dialogue box by pressing ENTER or by clicking the corresponding button. ESC will cancel the operation.

You are able to perform the following actions by selecting the corresponding button:

- File Load (Alt + L) – reads SCM data from a file. You can select a file to be loaded from the File selection dialogue box.
- File Save (Alt + S) – writes SCM data to a file. You can select the file to write to from the File selection dialogue box.
- Read Phone (Alt + R) – reads SCM data from the phone and updates it to the display.
- Write Phone (Alt + W) – writes SCM data to the phone. Before the data is written to the phone the user is asked to confirm the new data.
- Esc–Close – closes the SCM programming dialogue box. Click the button or press the ESC key.

User Menu Settings

By selecting Dealer / User Menu Settings you can view and change the following User Menu parameters:

- Lights
- Ring Volume
- Tone Volume
- Ring Type
- Memory Lock
- Phone Lock
- Call Barring
- Auto Answer

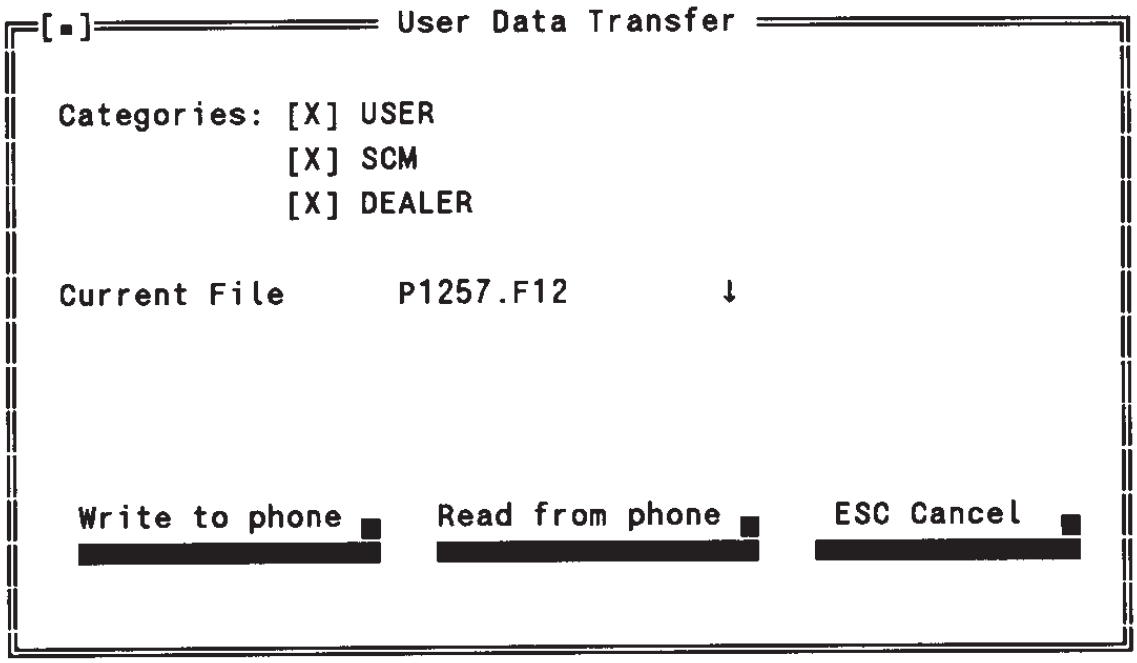
Use the TAB key to move between these groups and the arrow keys to select a new setting. Alternatively, you can click on the desired value with the mouse. Press ENTER or click on the corresponding button with the mouse to save the new settings to the EEPROM or press ESC to exit the dialogue box without altering the original values.

User Data Transfer

Selecting Dealer / User Data Transfer allows all the User data (excluding the ESN) to be transferred from one phone and programmed into another phone. Also in this dialogue box you are able to reset all the following parameters to the factory default values:

- Subscriber (NAM) numbers
- Short Code Memory
- SID Screening Table
- User Menu Settings

An example of the user data transfer dialogue box is shown below.



Select with check boxes which information you wish to transfer or reset to factory values.

In the dialogue box the following buttons are available:

- File Load (Alt + L) – reads user data from a file. You can select a file to be loaded from the File selection dialogue box. Only items that were checked can be read back.
- File Save (Alt + S) – writes user data to a file. You can select the file to write to from the File selection dialogue box. Only items that were checked can be stored to the file.
- Read Phone (Alt + R) – reads user data items that are checked from the phone.

- Write Phone (Alt + W) – writes user data to the phone. Before writing the user is asked to confirm the writing.
- Reset (Alt + T) – Resets the checked items to the original factory values.
- Esc–Close – closes the user transfer dialogue box. Click the button or press the ESC key.

Help Menu

The Help menu gives you access to the online help facility in a special window.

General Help

Choose Help/General Help to obtain general help information about the service PC Locals.

Using Help

Choose Help/Using Help to obtain information on how to use the help facilities.

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